ENABLE-IT ETHERNET EXTENSION EXPERTS

Enable-IT 868 Pro
Rev B Single Pair PoE+
Ethernet Extender
Quickstart Guide

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INSTALLING THE 868 PRO SINGLE PAIR POE+ KIT

The Enable-IT 868 Pro PoE+ & Extended Ethernet Kit have a distance restriction of 1,000ft or 305m over 1-pair of Category 3 up to Category 5e / CAT6 wiring from your LAN and power source to the remote PoE+ device. Therefore quick, simple site surveys and installation planning are highly recommended – This is ideal for installing PoE+ IP Security cameras or PoE+ WiFi Access Points.

This chapter describes the recommended installation process for the Enable-IT 868 Pro PoE+ & Extended Ethernet Kit. It covers the following topics:

- Site Plan – Installation Design Considerations
- Unpacking the Enable-IT 868 Pro PoE+ & Extended Ethernet Kit
- Perform an out of the box Test
- Performing the On-Site Installation

Site Plan - Installation Design Considerations

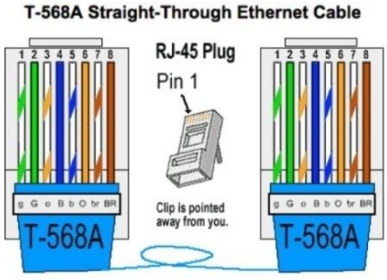
The planning process should involve a site walkthrough and discovery survey. Electrical Cable measurement tools are the most reliable method to determine the longest run of hidden wiring. Estimate the best locations to position the Broadband Concentrators to adequately reach desired connectivity on each floor. Document your findings to use in designing a network topology to support the Ethernet Switches and backbone connectivity. Key points to remember in the Site Survey.

- Total distance limitation of 1,000ft / 305m from end to end. -
- 1-pair Cat5e .30 Gage or better cabling is required for the 868 Pro Interlink transmission.
- Cisco PoE+ single line injector support built in. Not compatible with any PoE+ switches as the PoE+ switches are not smart enough to understand Extender Ethernet timing mechanisms and fail to set correct output voltage and will subsequently disable the PoE+ switch port.
- Transparent to single line 802.3af/802.3at PoE+ injectors and devices.

For CAT3 wiring (1-pair/2 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins (1,2) straight through. This will deliver Ethernet Data and PoE+.

For CAT5e or better wiring (1-pair/2 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins (1,2) straight through. This will deliver Ethernet Data and PoE+.

868 Pro CO



868 Pro CPE

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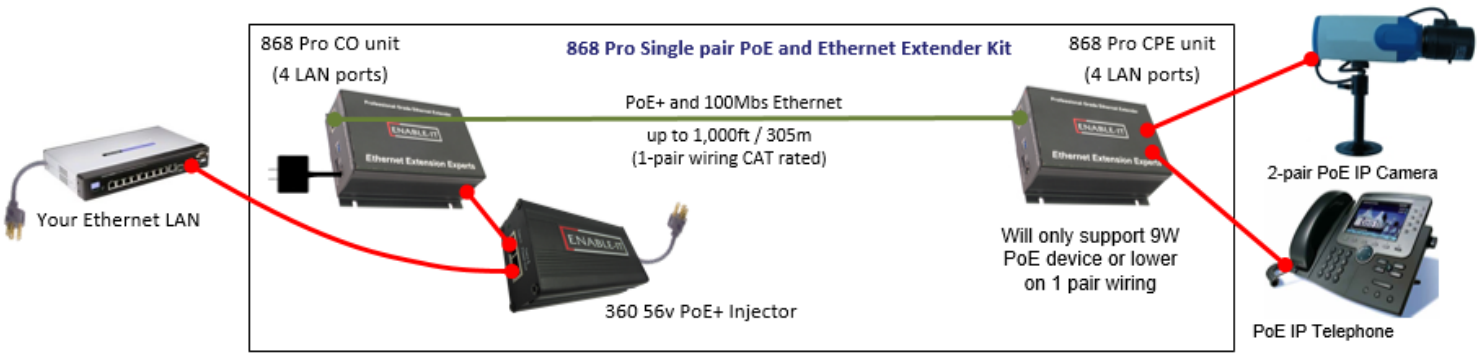
Perform an out of the box Test (OOTBT)

We highly recommend a quick test to ensure the working order of your 868 Pro units. To do this, please use one of the Ethernet patch cords provided and attach to the 868 Pro Interlink port of each 868 Pro unit. Using the 5v power adapter, power up the 868 Pro CO Unit and attach the 360 PoE+ Injector (P+Data Out port) to the 868 Pro CO LAN1/PoE+ port. After a few seconds you should see a solid Green Interlink Sync LED on each unit to confirm a link is established. The Green Interlink Sync LED will pulse rapidly as it detects traffic. This confirms basic proper operation of the units. Next for a more detailed test and to confirm your PoE+ LAN Equipment works with the 868, connect your Ethernet LAN and PoE+ remote device to the 868 Pro LAN ports and test connectivity.

WARNING: <u>DO NOT</u> use LAN1/2 PoE+ port on the CPE end for non-PoE+ equipment as it may damage any non-PoE+ equipment. Use the LAN 3-4 ports on the CPE for non-PoE+ equipment.


868 Pro CO unit
(4 LAN ports)
868 Pro Single pair PoE and Ethernet Extender Kit
868 Pro CPE unit
(4 LAN ports)
PoE+ and 100Mbs Ethernet
up to 1,000ft / 305m
(1-pair wiring CAT rated)
Your Ethernet LAN
360 56v PoE+ Injector
Will only support 9W
PoE device or lower
on 1 pair wiring
2-pair PoE IP Camera
PoE IP Telephone

LED indicators will provide visual operational status of the 868 Pro units.

Mode – Yellow Solid LED
Off = CO unit
On = CPE unit

Sync – Green slow to fast flicker LED on power up – indicates negotiation of a link
– Green solid LED indicates link established and rapid pulse is traffic

Act – Yellow LED
Off = No device attached or detected
On = Solid, indicates the presence of local LAN
On = Blinking, indicates the presence of local LAN traffic

Pwr – Green Solid LED indicates the unit is receiving 5v power

Next for a more detailed test and to confirm your PoE+ Equipment works with the 868, connect your PoE+ device to the 868 ProCPE LAN1/PoE+ port and your LAN to the 360 PoE+ Injector Data IN port. For use with a Cisco PoE+ device such as Aironet WiFi AP – Use the provided Cisco PoE+ patch cord or build one using it as a guide.

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Performing the On-Site Installation

After removing the Enable-IT 868 Pro PoE+ & Extended Ethernet Kit from the box and performing the out of the box testing all that remains to install the unit on-site is to mount the unit, build the interconnect wiring, add voice lines if needed and attach the LAN device cabling with the provided Ethernet Patch cords.

❶ Mounting the Enable-IT 868 Pro PoE+ & Extended Ethernet Units

The Enable-IT 868 Pro PoE+ & Extended Ethernet Kit is designed for quick wall mounting. Choose a location to mount each of the Enable-IT 868's where the maximum distance does not exceed 3,500ft or 1,067m total between devices to be connected. When mounting the Enable-IT 868 Pro PoE+ & Extended Ethernet Kit it is recommended that you use the appropriate anchors for your mounting surface. If mounting on plywood use wood screws; if mounting onto drywall or sheetrock, use plastic drywall anchors or Velcro can also be used as the units are very lightweight.

❷ Building the 868 Pro Interlink wiring

The most important aspect of the install is the correct wiring of the Interlink cabling. For CAT3 wiring (1-pair/2 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2) straight through. This will deliver Ethernet Data and PoE+.

For CAT5e or better wiring (1-pair/2 wires) you will need to crimp a RJ-45 Male Head to each end of the contiguous wire run and using the following pins(1,2) straight through. This will deliver Ethernet Data and PoE+.

❸ Attaching cabling and devices to the Enable-IT 868 Pro Extended Ethernet Kit.

Attach your remote PoE+ device to the 868 Pro CPE unit LAN1/PoE+ port with Ethernet patch cord provided. Attach your local LAN to the 360 PoE+ injector Data IN port. Attach the power adapter to the 868 Pro CO unit. Attach the 360 PoE+ injector to the 868 Pro CO LAN1/PoE+ port with Ethernet patch cord provided. **The last step is to apply power to the 360 PoE+ injector with the country power cord provided.**
Your equipment should now be powered up and functioning properly.

The LED indicators will provide visual operational status of the 868 Pro units.

Mode – Yellow Solid LED
Off = CO unit
On = CPE unit
Sync – Green slow to fast flicker LED on power up – indicates negotiation of a link
– Green solid LED indicates link established and rapid pulse is traffic
Act – Yellow LED
Off = No device attached or detected
On = Solid, indicates the presence of local LAN
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Pwr – Green Solid LED indicates the unit is receiving 5v power

❹ For troubleshooting, first examine the backbone wiring pair and make sure you have solid connections. The Interlink Sync LED will be lit on each 868 unit to show proper connection and pairing. If the Interlink Sync LED Link is flashing – (Not pulsing)

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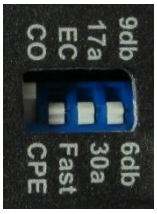
1) Make sure your wiring is straight thorugh and not connected to any Telco punch down blocks or as few as possible – they add interference. If your wiring is spliced, use Telco butt clips or gel filled caps to bridge the wire into a solid connection. A flashing Interlink Sync LED indicates the units are trying to connect to each other and are looking to synchronize frequencies.

2) Check for a firm connection of the RJ-45 connections in each 868 Pro unit, check any splice points in the Interlink wiring and that the 5V power adapter is applied to the 868 Pro CO and the 360 PoE+ injector is powered on.

3) You can always perform anther out of the box test to prove out the equipment and then focus on your interlink wiring.



Performance Settings (DIP Switch)

If you are experiencing performance issues with your Ethernet connection you may use the following DIP switch settings to adjust your application. For DIP switch 2-4 you must toggle both symmetrically, in other words the CO and CPE must match. If you turn DIP switch 3 Up (Off) on the CO, then you must do so for the CPE and vice-versa.

- Switch 1: CO / CPE Mode
  CO Mode – Up / Off Position
  CPE Mode – Down / On Position
  Central Office Equipment (CO) is generally the equipment residing at the Carrier Telephone office or the head end of a circuit. Customer Premise Equipment (CPE) is generally the equipment residing on the customer side of a circuit. Typically you would place the CO at the local end and the CPE at the remote end for reference only. CO's only communicate with CPE's.

- Switch 2: Error Correction Mode
  Interleaved Error Correction Enabled – Up / Off Position – degrades performance
  Fast Channel – Down / On Position (Default)
  Interleaved Error Correction works better for file transfers, where the delivered data must be error free but latency incurred by the retransmission of error packets is acceptable. Fast channel is preferred for streaming multimedia, where an occasional dropped bit is not noticeable or acceptable.

- Switch 3: 17a (over 1,500ft) / 30a (under 1,500ft) Mode
  17a Mode – Up / Off Position
  30a Mode – Down / On Position (Default)
  17a mode is only used for Interlink runs over 1,500ft to 6,000ft.
  30a mode is only enabled for Interlink runs under 1,500ft.

- Switch 4: Signal-to-noise Noise Ratio (SNR)
  9dB – Up / Off Position
  6dB – Down / On Position (Default)

Signal-to-noise ratio is a measurement that refers to how much noise is in the output of a device, in relation to the signal level. If you experience issues of noise bleeding over the lines, or high interference in your environment, it is suggested that you switch to 6dB SNR. This may help clean up any noise bleeding over your cabling.

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TECHNICAL SUPPORT

Enable-IT, Inc.'s Customer Care Team support is available directly to customers and distributors. All support requests are processed through the online support portal. This allows us to provide assigned support ticket numbers in order to bring closure to any technical issues.

Online Technical Services

The Enable-IT Support Portal is available 24/7 to open a ticket or check the status of one. Please use this support website as your first source for help as it contains an on-line knowledge base of articles, documentation, FAQ's and other problem-solving resources. This web-based support resource provides the quickest solution to the most common technical support issues.

World Wide Web Site

http://support.enableit.com

Returning Products for Warranty Repair

Enable-IT, Inc. warrants to the original purchaser of the Product ("you" or the "End User") that, for the four (4) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions. **Electrical damage is not an item that is covered under this warranty, extended warranties or Advanced Replacement Program (AREP).**

In order to obtain an authorized RMA approval, the End User must complete the required information online located at http://support.enableit.com. If you have questions or difficulty completing this information you may contact the Customer Care Team at 888-309-0910 between the hours of 8:00 a.m. and 5:00 p.m. PT.

Please ship Authorized RMAs to:

Enable-IT Processing Facility
16600 Harbor Blvd, Suite I
Fountain Valley, CA 92708-1363

Returning Products for Refund

Enable-IT, Inc. offers a generous 45-Day refund on a single Ethernet Extender Kit only, and is subject to a 15% Restocking Fee. Shipments without a valid or authorized RMA number, or sent to our corporate Las Vegas address, can be refused and / or billed for additional shipping.

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ENABLE-IT, INC. LIMITED WARRANTY

Enable-IT, Inc. warrants the Enable-IT 868 PRO PoE & Ethernet Extender Kit solely pursuant to the following terms and conditions.

1. PRODUCT WARRANTY.
a. Express Warranty.
Enable-IT warrants to the original purchaser of the Product ("you" or the "End User") that, for the four (4) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions. This warranty does not apply to Products, which are resold as used, repaired or reconditioned, or consumables (such as batteries) supplied with the Product. **Electrical damage is not an item that is covered under this warranty or extended warranties.** Enable-IT does not make any warranty with respect to any third party product, software or accessory supplied with or used in connection with the Product and such third party products, software and accessories, if any, are provided "AS IS." Warranty claims related to such third party products, software and accessories must be made to the applicable third party manufacturer.

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